

February 4, 2005

Marc Sauze SECOR P.O. Box 230 Redmond, WA 98073

Re:

Analytical Data for Project Conoco-Marysville

Laboratory Reference No. 0501-203

Dear Marc:

Enclosed are the analytical results and associated quality control data for samples submitted on January 26, 2005.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

Enclosures

Case Narrative

Samples were collected on January 26, 2005 and received by the laboratory on January 26, 2005. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

OnSite Environmental, Inc. 14648 NE 95th Street, Redmond, WA 98052 (425) 883-3881

NWTPH-Dx

Date Extracted: Date Analyzed: 1-26-05 1-28-05

Matrix:

Soil

Units:

mg/kg (ppm)

Client ID: Bo	ttom Sample	North Wall	West Wall
a a la	01-203-01	01-203-02	01-203-03
			. *
BiI D-man	ND	ND	ND
Diesel Range:		27	27
PQL:	140	. 21	
Identification:			
Lube Oil Range:	4700	980	640
PQL:	280	54	54
Identification:	Lube Oil	Lube Oil	Lube Oil
Surrogate Recovery			. je ki ki in
o-Terphenyl:	122%	138%	117%
o-Terphionyi.			
	V	V	Υ
Flags:	Y	1	

NWTPH-Dx METHOD BLANK QUALITY CONTROL

Date Extracted:

1-26-05

Date Analyzed;

1-27-05

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

MB0126S1

Diesel Range:

ND

PQL:

25

Identification:

Lube Oil Range:

ND

PQL:

50

Identification:

Surrogate Recovery

o-Terphenyl:

132%

Flags:

Y

NWTPH-Dx DUPLICATE QUALITY CONTROL

Date Extracted:

1-26-05

Date Analyzed:

1-28-05

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

01-203-01

01-203-01 DUP

Diesel Range:

ND

ND

PQL:

130

130

RPD:

N/A

Surrogate Recovery

o-Terphenyl:

122%

150%

Flags:

Y

Υ

SEMIVOLATILES by EPA 8270C/SIM page 1 of 3

1-28-05 Date Extracted: 1-31-05 Date Analyzed:

Soil Matrix:

mg/kg (ppm) Units:

01-203-01 Lab ID:

Bottom Sample Client ID:

	Compound:	Results	Flags	PQL
	Aniline	ND .		1.9
	bis(2-Chloroethyl)ether	ND		0.37
	Phenol	ND		0.19
	2-Chlorophenol	ND		0.19
	1,3-Dichlorobenzene	ND		0.19
	1,4-Dichlorobenzene	ND ,		0.19
	1,2-Dichlorobenzene	ND .		0.19
	Benzyl alcohol	ND	1 to 1	0.37
	bis(2-chloroisopropyl)ether	ND		0.37
	2-Methylphenol	ND		0.19
	Hexachloroethane	ND		0.19
	N-Nitroso-di-n-propylamine	ND.	1. A	0.19
	4-Methylphenol	ND		0.19
	Nitrobenzene	ND		0.19
	Isophorone	ND ND		0.19
	2-Nitrophenol	ND		0.37
	2,4-Dimethylphenol	ND		0.19
	bis(2-Chloroethoxy)methane	ND		0.37
•	2,4-Dichlorophenol	ND		0.19
	Benzoic acid	ND .		1.9
.,	1,2,4-Trichlorobenzene	ND		0.19
	Naphthalene	ND :		0.0074
	4-Chloroaniline	ND		0.93
	Hexachlorobutadiene	ND		0.37
	4-Chloro-3-methylphenol	ND		0.19
	2-Methylnaphthalene	ND		0.0074
	1-Methylnaphthalene	ND		0.0074
		-	3	

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SEMIVOLATILES by EPA 8270C/SIM page 2 of 3

Lab ID:

01-203-01

Client ID:

Bottom Sample

	Compound:	Results	Flags	PQL
	Hexachlorocyclopentadiene	ND		1.9
	2,4,6-Trichlorophenol	ND	100 g ¹⁰⁰ K	0.37
	2,4,5-Trichiorophenol	ND		0.37
	2-Chloronaphthalene	ND		0.37
	2-Nitroaniline	ND		0.37
	Acenaphthylene	ND	4 12	0.0074
	Dimethylphthalate	ND		0.37
	2,6-Dinitrotoluene	ND		0.93
	Acenaphthene	ND		0.0074
	3-Nitroaniline	ND		0.93
	2,4-Dinitrophenol	ND		1.9
	Dibenzofuran	ND	1 14	0.19
	2,4-Dinitrotoluene	ND		0.93
je.	4-Nitrophenol	ND		0.19
	Fluorene	ND .		0.0074
	4-Chiorophenyl-phenylether	ND		0.19
	Diethylphthalate	ND		0.37
	4-Nitroaniline	ND		0.93
	4,6-Dinitro-2-methylphenol	ND		0.93
	n-Nitrosodiphenylamine	ND		0.19
	4-Bromophenyl-phenylether	ND		0.19
	Hexachlorobenzene	ND		0.19
	Pentachlorophenol	ND		1.9
	Phenanthrene	ND .		0.0074
	Anthracene	ND		0.0074
	Carbazole	ND ·		0.19
	Di-n-butylphthalate	ND		0.19
	Fluoranthene	ND		0.0074
	Benzidine	ND		4.6
	Pyrene	0.011		0.0074
			2 2	6. 18

SEMIVOLATILES by EPA 8270C/SIM page 3 of 3

Lab ID: Client ID: 01-203-01

Bottom Sample

Compound:	Results	Flags	PQL
Compound.			
Dut the and debth cloto	ND		0.37
Butylbenzylphthalate	ND ·	a Same in	1.9
3,3'-Dichlorobenzidine			0.0074
Benzo[a]anthracene	ND		
Chrysene	ND	10	0.0074
bis(2-Ethylhexyl)phthalate	ND .		0.93
	ND		0.19
Di-n-octylphthalate			0.0074
Benzo[b]fluoranthene	ND		
Benzo[k]fluoranthene	ND		0.0074
Benzo[a]pyrene	0.0080	ret retir	0.0074
	ND		0.0074
Indeno[1,2,3-cd]pyrene	ND		0.0074
Dibenz[a,h]anthracene			
Benzo[g,h,i]perylene	0.019		0.0074
10. 14.		7.7	

Surrogate :	Percent Recovery	Control Limits
2-Fluorophenol	75	25-121
	79	24-113
Phenol-d6		23-120
Nitrobenzene-d5	74 / 1	The second of the second
2-Fluorobiphenyl	70	30-115
		19-122
2,4,6-Tribromoph	ienoi	18-137
Terphenyl-d14	89	10-131

Date of Report: February 4, 2005 Samples Submitted: January 26, 2005 Laboratory Reference: 0501-203

Project: Conoco-Marysville

SEMIVOLATILES by EPA 8270C/SIM page 1 of 3

1-28-05 Date Extracted: 1-31-05 Date Analyzed:

Soil Matrix:

mg/kg (ppm) Units:

01-203-02 Lab ID: North Wall Client ID:

	Compound:	Results	Flags	PQL
	Compound	* . *		· ·
	Aniline	ND :		0.36
	bis(2-Chloroethyl)ether	ND		0.072
	Phenol	ND .		0.036
	2-Chlorophenol	ND		0.036
	1,3-Dichlorobenzene	ND		0.036
	1,4-Dichlorobenzene	ND ·		0.036
	1,2-Dichlorobenzene	ND.		0.036
	Benzyl alcohol	ND		0.072
	bis(2-chloroisopropyl)ether	ND.		0.072
	2-Methylphenol	ND		0.036
	Hexachloroethane	ND		0.036
	N-Nitroso-di-n-propylamine	ND :		0.036
	4-Methylphenol	ND		0.036
	Nitrobenzene	ND		0.036
18	Isophorone	ND .		0.036
	2-Nitrophenol	ND ·		0.072
	2.4-Dimethylphenol	ND		0.036
	bis(2-Chloroethoxy)methane	ND ·		0.072
	2,4-Dichiorophenol	ND		0.036
	Benzoic acid	ND		0.36
	1,2,4-Trichlorobenzene	ND		0.036
	Naphthalene	ND,		0.0072
	4-Chloroaniline	ND		0.18
	Hexachlorobutadiene	ND		0.072
	4-Chloro-3-methylphenol	ND		0.036
	2-Methylnaphthalene	ND .		0.0072
	1-Methylnaphthalene	ND		0.0072

SEMIVOLATILES by EPA 8270C/SIM page 2 of 3

Lab ID: Client ID: 01-203-02

North Wall

Compound:	Results	Flags	PQL	
Hexachlorocyclopentadiene	ND .		0.36	-
2,4,6-Trichlorophenol	ND .		0.072	
2,4,5-Trichlorophenol	ND		0.072	
2-Chloronaphthalene	ND :		0.072	
2-Nitroaniline	ND		0.072	
Acenaphthylene	ND '		0.0072	
Dimethylphthalate	ND .		0.072	
2,6-Dinitrotoluene	ND		0.18	
Acenaphthene	ND		0.0072	
3-Nitroaniline	ND		0.18	
2.4-Dinitrophenol	ND		0.36	
Dibenzofuran	ND		0.036	
2,4-Dinitrotoluene	ND		0.18	
4-Nitrophenol	ND.		0.036	
Fluorene	ND		0.0072	
4-Chlorophenyl-phenylether	ND .		0.036	
Diethylohthalate	ND :		0.072	
4-Nitroaniline	ND		0.18	
4,6-Dinitro-2-methylphenol	ND		0.18	
n-Nitrosodiphenylamine	ND		0.036	
4-Bromophenyl-phenylether	ND		0.036	
Hexachlorobenzene	ND		0.036	
Pentachlorophenol	ND		0.36	
Phenanthrene	ND	are L	0.0072	
Anthracene	ND		0.0072	
Carbazole	ND .		0.036	
Di-n-butylphthalate	ND		0.036	
Fluoranthene	ND		0.0072	
Benzidine	ŃD		0.90	
	ND		0.0072	
Pyrene			*	

0.0072

0.0072

Date of Report: February 4, 2005 Samples Submitted: January 26, 2005 Laboratory Reference: 0501-203 Project: Conoco-Marysville

SEMIVOLATILES by EPA 8270C/SIM page 3 of 3

ND

Lab ID: Client ID:

Dibenz[a,h]anthracene

Benzo[g,h,i]perylene

01-203-02 North Wall

Compound:	Re	esults	Flags	PQL
Butylbenzylphthalate		ND		0.072
		ND ·		0.36
3,3'-Dichlorobenzidine		ND .		0.0072
Benzo[a]anthracene		ND		0.0072
Chrysene				0.18
bis(2-Ethylhexyl)phthalate	,	ND		5.00
Di-n-octylphthalate		ND		0.036
Benzo[b]fluoranthene		ND ·	1 1 1	0.0072
Benzo[k]fluoranthene		ND .		0.0072
		ND:	e je te e i e	0.0072
Benzo[a]pyrene		ND		0.0072
Indeno[1,2,3-cd]pyrene		ND		0.0072

그 보다 하다 보는 이렇게 뭐라고 있는 물리에 된 이 없는 그 그 없는데 이번 모르는 모든데
2-Fluorophenol 62 25-121
co 24-113
Phenol-do
Nitropenzene-do
20 116
2-Fluoropiphenyi
2.4 6- Frincomonnenol
Terphenyl-d14 78 18-137

SEMIVOLATILES by EPA 8270C/SIM page 1 of 3

1-28-05 Date Extracted: 1-31-05 Date Analyzed:

Soil Matrix:

mg/kg (ppm) Units:

01-203-03 Lab ID: West Wall Client ID:

Compound:	Results	Flags	PQL
			0.36
Aniline	ND		11.0
bis(2-Chloroethyl)ether	ND		0.072
Phenol	ND		0.036
2-Chlorophenol	ND		0.036
1,3-Dichlorobenzene	ND		0.036
1,4-Dichlorobenzene	ND		0.036
1,2-Dichlorobenzene	ND		0.036
Benzyl alcohol	ND .		0.072
bis(2-chloroisopropyl)ether	ND		0.072
2-Methylphenol	ND		0.036
Hexachloroethane	ND.		0.036
N-Nitroso-di-n-propylamine	ND		0.036
4-Methylphenol	ND		0.036
Nitrobenzene	ND		0.036
Isophorone	ND		0.036
2-Nitrophenol	ND		0.072
2,4-Dimethylphenol	ND .	i a marita	0.036
bis(2-Chloroethoxy)methane	ND		0.072
2,4-Dichlorophenol	ND '		0.036
Benzoic acid	ND .		0.36
1,2,4-Trichlorobenzene	ND		0.036
Naphthalene	ND .		0.0072
4-Chloroaniline	ND		0.18
Hexachlorobutadiene	ND		0.072
4-Chloro-3-methylphenol	ND	4 14	0.036
2-Methylnaphthalene	ND	* 4	0.0072
1-Methylnaphthalene	ND	, i	0.0072

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SEMIVOLATILES by EPA 8270C/SIM page 2 of 3

Lab ID:

01-203-03

West Wall Client ID:

Compound:	Results	Flags	PQL
Hexachlorocyclopentadiene	ND	7	0.36
2,4,6-Trichlorophenol	ND .		0.072
2,4,5-Trichlorophenol	ND		0.072
2-Chloronaphthalene	ND		0.072
2-Nitroaniline	ND		0.072
Acenaphthylene	ND		0.0072
Dimethylphthalate	ND .	48	0.072
2,6-Dinitrotoluene	ND		0.18
Acenaphthene	ND		0.0072
3-Nitroaniline	ND		0.18
2,4-Dinitrophenol	ND		0.36
Dibenzofuran	ND		0.036
2,4-Dinitrotoluene	ND	and the	0.18
4-Nitrophenol	ND		0.036
Fluorene	ND		0.0072
4-Chlorophenyl-phenylether	ND		0.036
Diethylphthalate	ND		0.072
4-Nitroaniline	ND		0.18
4,6-Dinitro-2-methylphenol	ND		0.18
n-Nitrosodiphenylamine	ND		0.036
4-Bromophenyl-phenylether	ND		0.036
Hexachlorobenzene	ND.		0.036
Pentachlorophenol	ND		0.36
Phenanthrene	ND		0.0072
Anthracene	. ND	2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	0.0072
Carbazole	ND		0.036
Di-n-butylphthalate	ND		0.036
Fluoranthene	ND		0.0072
Benzidine	ND.		0.90
Pyrene	ND	T	0.0072

SEMIVOLATILES by EPA 8270C/SIM page 3 of 3

Lab ID: Client ID: 01-203-03 West Wall

Compound:		Results	Flags	PQL
Compound:				
Butylbenzylphthalate		 ND .		0.072
3,3'-Dichlorobenzidine		 ND		0.36
Benzo[a]anthracene		ND		0.0072
Chrysene		 ND .		0.0072
bis(2-Ethylhexyl)phthalate		 ND		0.18
	* 5 · · ·	ND		0.036
Di-n-octylphthalate		ND	e familia de la composición della composición de	0.0072
Benzo[b]fluoranthene		 		0.0072
Benzo[k]fluoranthene		 ND		0.0072
Benzo[a]pyrene	4 1	 ND		
Indeno[1,2,3-cd]pyrene	1.5	ND		0.0072
Dibenz[a,h]anthracene		ND		0.0072
Benzo[g,h,i]perylene		ND		0.0072
Dougla Line Land	. v			

Surrogate:	Percent Recovery	Control Limits
2 Eluaranhanal	48	25-121
2-Fluorophenol	54	24-113
Phenol-d6		
Nitrobenzene-d5	49	23-120
	55	30-115
2-Fluorobiphenyl		
2,4,6-Tribromophe	nol 75	19-122
	74	18-137
Terphenyl-d14		,

SEMIVOLATILES by EPA 8270C/SIM METHOD BLANK QUALITY CONTROL

page 1 of 3

Date Extracted: 1-28-05
Date Analyzed: 1-31-05

Matrix: Soil

Units: mg/kg (ppm)

Lab ID: MB0128S1

	Results	Flags	PQL
Compound:			*
011	ND		0.33
Aniline	ND	AN A	0.067
bis(2-Chloroethyl)ether	ND		0.033
Phenol	ND	-, -	0.033
2-Chlorophenol	ND		0.033
1,3-Dichlorobenzene	ND		0.033
1,4-Dichlorobenzene	ND		0.033
1,2-Dichlorobenzene	ND		0.067
Benzyl alcohol	ND		0.067
bis(2-chloroisopropyl)ether	ND		0.033
2-Methylphenol	ND		0.033
Hexachloroethane	ND		0.033
N-Nitroso-di-n-propylamine	ND	T. A.	0.033
4-Methylphenol	ND		0.033
Nitrobenzene	ND	and the second	0.033
Isophorone	ND		0.067
2-Nitrophenol	ND		0.033
2,4-Dimethylphenol	ND		0.067
bis(2-Chloroethoxy)methane	ND		0.033
2,4-Dichlorophenol	ND	1 4.7	0.33
Benzoic acid	ND		0.033
1,2,4-Trichlorobenzene	ND		0.0067
Naphthalene	ND		0.17
4-Chloroaniline	ND		0.067
Hexachlorobutadiene	ND		0.033
4-Chloro-3-methylphenol	ND		0.0067
2-Methylnaphthalene	ND		0.0067
1-Methylnaphthalene			

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Date of Report: February 4, 2005 Samples Submitted: January 26, 2005 Laboratory Reference: 0501-203

Project: Conoco-Marysville

SEMIVOLATILES by EPA 8270C/SIM METHOD BLANK QUALITY CONTROL

page 2 of 3

Lab ID:

MB0128S1

Compound:	Results	Flags	PQL
Hexachlorocyclopentadiene	ND		0.33
2,4,6-Trichlorophenol	ND		0.067
2,4,5-Trichlorophenol	ND		0.067
2-Chloronaphthalene	ND		0.067
2-Nitroaniline	ND		0.067
Acenaphthylene	ND		0.0067
Dimethylphthalate	ND		0.067
2,6-Dinitrotoluene	ND		0.17
Acenaphthene	ND		0.0067
3-Nitroaniline	ND		0.17
2,4-Dinitrophenol	ND		0.33
Dibenzofuran	ND :		0.033
2,4-Dinitrotoluene	ND		0.17
4-Nitrophenol	ND .		0.033
Fluorene	ND ·		0.0067
4-Chlorophenyl-phenylether	ND .		0.033
Diethylphthalate	ND		0.067
4-Nitroaniline	ND :		0.17
4,6-Dinitro-2-methylphenol	ND		0.17
n-Nitrosodiphenylamine	ND		0.033
4-Bromophenyl-phenylether	ND		0.033
Hexachlorobenzene	ND		0.033
Pentachlorophenol	ND		0.33
Phenanthrene	ND		0.0067
Anthracene	ND		0.0067
Carbazole	ND.		0.033
Di-n-butylphthalate	ND		0.033
Fluoranthene	ND		0.0067
Benzidine	ND	F 18.	0.83
Pyrene	ND		0.0067
		f a	

SEMIVOLATILES by EPA 8270C/SIM METHOD BLANK QUALITY CONTROL

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Lab ID:

MB0128S1

Compound:	Results Flags	PQL
Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo[a]anthracene Chrysene bis(2-Ethylhexyl)phthalate Di-n-octylphthalate Benzo[b]fluoranthene Benzo[k]fluoranthene Benzo[a]pyrene Indeno[1,2,3-cd]pyrene Dibenz[a,h]anthracene Benzo[g,h,i]perylene	ND N	0.067 0.33 0.0067 0.0067 0.17 0.033 0.0067 0.0067 0.0067 0.0067

Surrogate:	Percent Control Recovery Limits
2-Fiuorophenol	54 25-121
	58 24-113
Phenol-d6	57 23-120
Nitrobenzene-d5	00.445
2-Fluorobiphenyl	.
2,4,6-Tribromophenol	75 19-122
Terphenyl-d14	78 18-137

SEMIVOLATILES by EPA 8270C/SIM SB/SBD QUALITY CONTROL

Date Extracted:

1-28-05

Date Analyzed:

1-31-05

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

SB0128S1

i	Compound:	MB Amount	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
	Phenol	ND	1.33	0.835	63	0.852	64	26-90	*
	2-Chlorophenol	ND	1.33	0.849	64	0.847	64	25-102	** *
	1,4-Dichlorobenzene	ND	0.667	0.347	52	0.409	61	20-73	. :
	N-Nitroso-di-n-propylamine	ND	0.667	0.385	58	0.407	61	41-126	
	1,2,4-Trichlorobenzene	ND	0.667	0.369	55	0.414	62	30-83	
	4-Chloro-3-methylphenol	ND	1.33	0.936	70	0.942	71.	26-103	- : -
	Acenaphthene	ND	0.667	0.447	67	0.446	67	31-137	
	2.4-Dinitrotoluene	ND	0.667	0.576	86	0.531	80 -	28-89	
	4-Nitrophenol	ND	1.33	1.14	85	1.09	82	11-114	. 1.
	Pentachlorophenol	ND	1.33	1.04	78	0.981	74	17-109	
	Pyrene	ND	0.667	0.537	. 81	0.519	78	35-142	

		RPD	
	RPD	Limits	Flags
Phenol	2	35	
2-Chlorophenol	0	50	
1,4-Dichlorobenzene	17	27	
N-Nitroso-di-n-propylamine	5	38	
1,2,4-Trichlorobenzene	11	18	
4-Chloro-3-methylphenol	1 .	33	
Acenaphthene	0	19	
2,4-Dinitrotoluene	8	47	
4-Nitrophenol	5	50	
Pentachlorophenol	6	47	
Pyrene	. 4	36	
, yiono			

% MOISTURE

Date Analyzed:

1-26-05

Client ID		Lab ID			% N	/loist	ıre
Bottom Sample		01-203-01	÷.,			10	
North Wall		01-203-02	* pr = 1			7	
West Wall	**.*	01-203-03		· · ·		7	



Data Qualifiers and Abbreviations

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- G Insufficient sample quantity for duplicate analysis.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- O Hydrocarbons indicative of diesel fuel are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical ______
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a silica gel cleanup procedure.
- Y Sample extract treated with an acid/silica gel cleanup procedure.

Z.

ND - Not Detected at PQL

PQL - Practical Quantitation Limit

RPD - Relative Percent Difference

chain of custody

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Environmental Inc. 14649 NE 95th Street • Redmond, WA 98052	Tur (i	naround F n working	lequest Úays)	La	abor	atoı	ry N	lun	nbe	r:	a State of the	THE STREET				Ų	1-	-2(7	
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APPENDIX C SOIL SAMPLING PROCEDURES

SOIL SAMPLING PROCEDURES

SOIL SAMPLE COLLECTION

Soil samples were collected at selected locations and in accordance with the frequency and locations recommended in the Washington State Department of Ecology document 'Guidance for Site Checks and Site Assessments for Underground Storage Tanks' Revised October 1992.

A log was compiled during soil sampling, including descriptions of the soil types, color, texture, degree of consolidation, and moisture content. Soil types were based on the Unified Soil Classification System.

FIELD SCREENING OF SOIL SAMPLES

Soil samples were field screened for visual or olfactory indications of petroleum hydrocarbons, tested for sheen by water immersion, and tested for headspace vapor concentrations using a portable photoionization detector (PID).

Data generated from field screening instruments were considered qualitative in nature. Although semi-quantitative data are generated using a PID, the results cannot be relied upon with the confidence of a laboratory analysis. Data generated from this type of analysis may provide the following:

- Identification of soil, water, air, and waste locations that have a high likelihood of showing contamination through subsequent laboratory analysis.
- Real-time data used for health and safety consideration during site reconnaissance and subsequent intrusive activities.
- Quantitative data, if contaminant is known and the instrument is calibrated to that substance.

FIFLD SCREENING USING VAPOR HEADSPACE TESTING

The instrument used for headspace vapor testing was a MiniRAE® Plus PID. Prior to use, this instrument was calibrated to a known isobutylene calibrating standard (100 parts per million [ppm]), in accordance with the manufacturer's specifications.

The following sequential steps were completed for each sample analyzed:

- A representative portion of the soil sample was collected directly from exposed soils into a new, sealable Ziploc-type plastic bag. The bag was immediately sealed.
- The sealed bag with sample was allowed to sit at field ambient temperature for several minutes.
- One end of the bag seal was slightly opened and the intake port of a PID was carefully inserted through the opening.

 The stabilized numerical value was observed and recorded onto the boring log form.

This number does not represent a concentration of volatiles in ppm; it is a relative measure of the amount of ionized compounds present. As the exact chemical species present is unknown, the units of concentration are referred to as ppm of isobutylene.

Vapor headspace screening is only applicable as a screening method for the presence of ionizable compounds with first ionization potentials of less than 10.6 electron volts. In addition, variables that may affect measurable concentrations and unaccounted for in this procedure include, but are not limited to: temperature, soil moisture content, and soil organic content. Vapor headspace screening is not designed for screening for evidence of contamination by semi-volatile or non-volatile organic compounds or for the presence of elemental metals or compounds.

EQUIPMENT CALIBRATION AND MAINTENANCE

All instruments and equipment used during this project were operated, calibrated, and maintained according to the manufacturers' guidelines and recommendations. Operation, calibration, and maintenance were performed by personnel who have been properly trained in these procedures.

Field screening instruments used were appropriate for detection of petroleum hydrocarbons such as benzene, toluene, and xylenes. Instruments were calibrated and maintained according to manufacturers' instructions.

APPENDIX D SOIL DISPOSAL MANIFEST



Woodworth & Company, Inc.

1200 East D Street / Tacoma, Washington 98421 Telephone (253) 383-3585

Ticket: 38984

LAKEVIEW PIT TICKET

Contractors Lic. # WOODW 377NO



Wmaster: ANNE

CAUTION: HO	OT ASPHALT WI	LL BURN YOU	!!	RECEIV	* MARK	
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REMARKS

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PAY THIS AMOUNT

TPS Technologies Soil Recycling Manifest Manifest # 1 Non-Hazardous Soils Transporter Truck #: Date of Shipment: Responsible for Payment: Facility #: Given by TPS: Load # 5115 GENERATOR AO3 Cionerator's Name and Billing Address: Generator's Phone #: Generator's US EPA 1D No. (206) 706-2341 ConocoPhillips Company 1144 EASTLAKE AVE EAST Person to Contact: KIP ECKERT SUITE 201 Customer Account Number with TPS: FAX#: SEATTLE, WA 98109 USA 1001765 / (206) 706-2339Consultant's Phone #: Consultant's Name and Billing Address: (425) 372-1600 SECOR INTERNATIONAL, INC. Person to Contact: 12034, 134th COURT NE SUITE" #102 MARC SAUZE Customer Account Number with TPS: FAX#: REDMOND, WA 98052 1001387 / (425) 372-1650 BTEX Site Phone #: Concration Site (Transport from): (name & address) CONOCOPHILLIPS MARYSVILLE HOIST PULL Person to Contact: TI'H 3323 MARINE VIEW DRIVE Levels KIPP ECKERT USA MARYSVILLE, WA AVG. FAX#: Levels Designated Facility (Transport to): (name & address) Facility Phone #: Facility Permit Numbers (253)584 - 8430TPS Technologies Inc. 2800 - 104th Street Court South Person to Contact: Jennifer Pidgeon Lakewood, WA 98499 USA Generator FAX#: (253) 584-8309 Transporter's US EPA ID No.: Transporter's Phone #: Transporter Name and Mailing Address: CUSTOM BACKHOE & DUMP TRUCK (425) 641-6659Transporter's DOT No.: Person to Contact: 13032 SE 45th CT. GEOFF YATES BELLEVUE, WA 98006 Customer Account Number with TPS: FAX#: 1002109 (425)-562=4617 Gross Weight | Tare Weight | Contaminated by: Approx. Qty: Description of Delivery **Moisture Content** Description of Soil 0 - 10% Sand 🗆 Organic 🗆 Diesel D 10 - 20% Clay 🗆 Other D Other D 20% - over □ 0 - 10% Gas Organic D Sand D Diesel 🗅 10 - 20% Clay 3 Other Q NET TONS= Other Q 20% - over D List any exception to items listed above: Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by melus for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way. Generator 🗆 Consultant D Signature and date: Print or Type Name: Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site. Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above: Print or Type Name: J. Pidgeon

Please print or type.



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P.O. BOX 2037, EVERETT, WA 98213 • (425) 355-2111

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